



1. Calculate the GCF and the lcm of the following numbers by the Euclidean algorithm: 1617 and 525.

$$\begin{array}{r}
 1617 \overline{) 525} \rightarrow 525 \overline{) 42} \rightarrow 42 \overline{) 21} \\
 042 \quad 3 \qquad 105 \quad 12 \qquad 0 \quad 2 \\
 \underline{21}
 \end{array}$$

$$\text{GCF}(1617; 525) = 21$$

$$\text{lcm}(1617; 525) = \frac{1617 \cdot 525}{21} = \frac{848925}{21} = \underline{40425}$$

2. Calculate all divisors of 220.

$$1 \cdot 220 = 220$$

$$2 \cdot 110 = 220$$

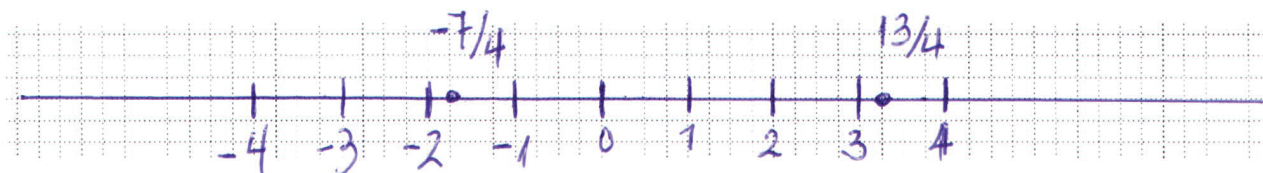
$$4 \cdot 55 = 220$$

$$10 \cdot 22 = 220$$

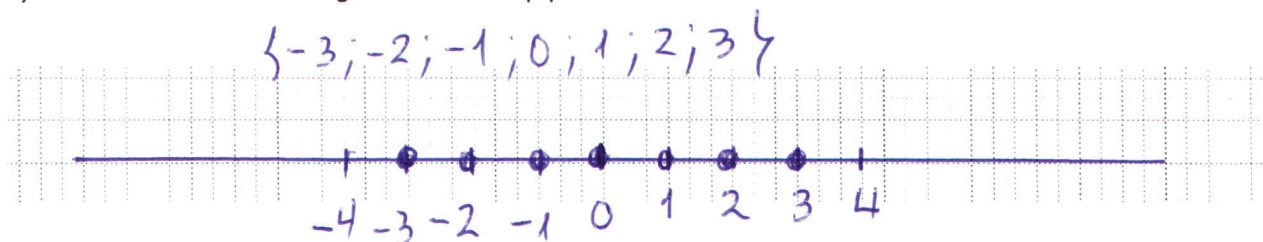
$$11 \cdot 20 = 220$$

$$\underline{\text{Div}(220)} = \{1, 2, 4, 10, 11, 20, 22, 55, 110, 220\}$$

3. a) Draw in the number line the following fractions: $-7/4$ and $13/4$



- b) Find and draw all the integers that work: $|x| \leq 3$





4. Work out:
- a) A fourth of $\frac{7}{8}$
 - b) Two third of $\frac{9}{5}$
 - c) The triple of a half of $\frac{5}{7}$

$$a) \frac{1}{4} \cdot \frac{7}{8} = \boxed{\frac{7}{32}}$$

$$b) \frac{2}{3} \cdot \frac{9}{5} = \frac{18}{15} = \boxed{\frac{6}{5}}$$

$$c) 3 \cdot \frac{1}{2} \cdot \frac{5}{7} = \boxed{\frac{15}{14}}$$

5. Evaluate the following expression step by step: $(-3\sqrt[3]{64} - 2^4 : 4 + 3) \cdot \sqrt{49}$

$$(-3 \cdot 4 - 16 : 4 + 3) \cdot 7 =$$

$$= (-12 - 4 + 3) \cdot 7 =$$

$$= -13 \cdot 7 = \boxed{-91}$$

6. Simplify by taking out of the root the largest factor: a) $\sqrt{18}$; b) $\sqrt{75}$; c) $\sqrt[3]{24}$; d) $\sqrt[3]{250}$

$$a) \sqrt{18} = \sqrt{3^2 \cdot 2} = \boxed{3\sqrt{2}}$$

$$b) \sqrt{75} = \sqrt{5^2 \cdot 3} = \boxed{5\sqrt{3}}$$

$$c) \sqrt[3]{24} = \sqrt[3]{2^3 \cdot 3} = \boxed{2\sqrt[3]{3}}$$

$$d) \sqrt[3]{250} = \sqrt[3]{5^3 \cdot 2} = \boxed{5\sqrt[3]{2}}$$



7. Calculate step by step: $\frac{-1 + \frac{3}{4} - \frac{1}{3}}{2 - \frac{1}{4}} =$

$$= \frac{\frac{-12 + 9 - 4}{12}}{\frac{8}{4} - \frac{1}{4}} = \frac{\frac{-12 + 9 - 4}{12}}{\frac{7}{4}} = \frac{-\frac{7}{12}}{\frac{7}{4}} = \frac{-7 \cdot 4}{7 \cdot 12} = \frac{-\cancel{7} \cdot \cancel{4}}{\cancel{7} \cdot 2 \cdot 2 \cdot 3} =$$

$$= \boxed{\frac{-1}{3}}$$

8. Classify the fractions as their decimal form: a) $\frac{7}{8}$ b) $\frac{5}{6}$ c) $\frac{105}{3}$ d) $\frac{14}{11}$

a) $\frac{7}{8} = 0.875$ dec. finito; b) $\frac{5}{6} = 0.8\bar{3}$ dec. periódico

$$\begin{array}{r} 70 \overline{) 18} \\ 60 \\ \hline 40 \\ 0 \end{array}$$

$$\begin{array}{r} 50 \overline{) 16} \\ 20 \\ \hline 20 \dots \end{array}$$

c) $\frac{105}{3} = 35$
Entero

$$\begin{array}{r} 105 \overline{) 13} \\ 15 \\ \hline 0 \end{array}$$

d) $\frac{14}{11} = 1.2\bar{7}$
Dec. periódico.

$$\begin{array}{r} 14 \overline{) 11} \\ 30 \\ \hline 80 \\ 30 \dots \end{array}$$

9. Convert the following numbers to a fraction and simplify the result: a) 1.25 b) $8\bar{3}$ c) $2\bar{681}$.

a) $1.25 = \frac{125}{100} = \frac{25}{20} = \frac{5}{4}$

b) $8\bar{3} = \frac{83-8}{9} = \frac{75}{9} = \frac{25}{3}$

c) $2\bar{681} = \frac{2681-26}{990} = \frac{59}{22}$



10. Write as a power whose base is a prime number: a) -343 ; b) $\frac{1}{64}$; c) $\left[(3^4)^{-2}\right]^3$; d) $\left(\frac{1}{9}\right)^3$

a) $-343 = -7^3$; b) $\frac{1}{64} = \frac{1}{2^6} = 2^{-6}$; c) $\left[(3^4)^{-2}\right]^3 = 3^{-24}$

$$\begin{array}{r} 343 \overline{) 7} \\ 49 \overline{) 7} \\ 7 \overline{) 7} \\ 1 \end{array}$$

d) $\left(\frac{1}{9}\right)^3 = \left(\frac{1}{3^2}\right)^3 = (3^{-2})^3 = 3^{-6}$

11. You have to answer the following questions. You can write in Spanish or English

a) What is the name for each letter on this expression: $a^n = b$?

a is the base | b is the power
n is the exponent

b) What factors do you have to use to find the HCF of many numbers?

The entire prime factors with the greatest exponents

c) What is the relationship between the volume and the edge of a cube?

$V = e^3$; Volume is the edge cubed.

d) What is an irrational numbers according to its decimal value?

It has infinite decimals but without period.